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| 09/873,842 | 06/04/2001 | Richard A. Cronenberg | M1005/7004 (RJK) | 4024 |

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| EXAMINER |
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GORDON, BRIAN R

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| ART UNIT | PAPER NUMBER |
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1743

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,842

Applicant(s)

CRONENBERG ET AL.

Examiner

Brian R. Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) 22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-18,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 7, 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-18 and 20-21 in Paper No. 10 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 8, 10-13, 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 5, it is unclear what the term "its" is referring to in line 5, in the phrase "its bias".

Claim 8 appears to be directed to a particular process step and not structural limitations that further limit the structure of the device. The claim defines how the nozzle is to be mounted. Furthermore the nozzle has not been positive claimed as an element of the invention in any of the preceding claims.

Claim 10 appears to be directed to a particular process step and not structural limitations that further limit the structure of the device. The claim defines a situation or position to which the ejector sleeve is moved.

Claim 11 appears to be directed to a particular process step and not structural limitations that further limit the structure of the device. The claim defines a situation or position to which the ejector sleeve is moved. Furthermore the tip (or plurality of tips) has not been positive claimed as an element of the invention in any of the preceding claims. The tip(s) is not considered an element of the claimed tip removal mechanism and therefore the tips do not further limit the structure of the removal mechanism.

Claims 12-13 and 18 appear to be directed to a particular process step and not structural limitations that further limit the structure of the device. The claim defines a situation or a result that occurs due to a step of performing an action with the elements of the mechanism. What structure provides for the feedback? Is there a display, detector, or sensor?

As to claim 17, applicant refers to the types of tips, however the tips have not been positively recited as elements of the invention. Does applicant intent for the tips and tip types to be considered as elements of the invention?

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-2, 7-10, 12-16, 18, and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Magussen, Jr et al. US 6,532,837.

Magussen Jr. et al. discloses a pipette for repeatedly aspirating and dispensing a predetermined quantity of liquid. The pipette includes a hollow body having first and second extremities. The second extremity is adapted to removably receive the pipette tip. An ejector is carried by the body and has a first extremity disposed within the first extremity of the housing and a second extremity movable vertically about the second extremity of the housing. The ejector is movable from a first position for permitting the pipette tip to be securely mounted on the second extremity of the housing and a second position for pushing the pipette tip off of the second extremity of the housing. A spring is carried by the housing and is compressed so as to store energy in the spring. A locking mechanism is additionally carried by the housing for retaining the spring in the compressed position. The locking mechanism is releaseable so that the ejector is driven by the spring to the second position to move the pipette tip distally on the second extremity of the housing.

Pipette 51 has means which includes a flange member or collar 77 for compressing the eject spring 76 so as to store energy in the spring. Means is provided for securing the collar 77 to rod 68 and in this regard the collar 77 can be formed integral with the rod 68. Eject spring 76 is disposed between rod retainer or bushing 72 and collar 77 and, more specifically, has a first or upper end portion 76a seated against bushing 72 and a second or lower end portion 76b seated against collar 77. Each of the bushing 72 and collar 77 are provided with an annular groove for receiving the

respective end portion of eject spring 76. The spring 76 is in a slightly compressed state, as shown in FIG. 7, when ejector 67 is in its lower position. This initial compression inhibits spring rattle. Movement of ejector 67 to its upper position causes eject spring 76 to compress, as shown in FIG. 2. Bushing 72 is removable from housing 52 to permit placement of spring 76 and collar 77 within bore 71 during assembly of pipette 51, yet can be rigidly secured to handle 52a so as not to be dislodged during compression of eject spring 76.

The ejector assembly 66 includes locking means carried by housing 52 for retaining eject spring 76 in its compressed position (see FIGS. 1-3). A plate member or friction brake member 81 is included within the locking means and has first and second end portions 81a and 81b. The brake member or brake 81 has a first or upper planar surface 82 and a second or lower planar surface 83 extending parallel to surface 82 and is provided with a circular-shaped bore 84, shown in FIG. 5, formed by an inner cylindrical surface 86 extending perpendicularly between the upper and lower surfaces 82 and 83. Pipette housing 52 has an internal ledge 87 upon which the first or free end portion 81a of the brake sits. Brake 81 is pivotable about ledge 87 between a first or unlocked position shown in FIGS. 5-7 for permitting rod 68 to move freely in either an upward or downward direction relative to brake 81 and housing 52 and a second or locked position shown in FIGS. 1 and 2 in which the brake 81 restricts the rod 68 from moving downwardly within housing 52 regardless of the strength of eject spring 76. When brake 81 is in its locked position, diametrically opposed portions 86a and 86b of

inner surface 86 frictionally engage the outer surface of rod 68 for restricting downward movement of the rod relative to the brake (see FIG. 2 and 3).

The ejector assembly 66 further includes release means for releasing brake 81 relative to rod 68. The release means, preferably in the form of finger actuatable means, includes a release means or assembly 91 for pivoting brake 81 between its locked and unlocked positions relative to ledge 87 (see FIGS. 1, 2 and 4).

Normally, the stored energy and force from eject spring 76 is sufficient to push the pipette tip 41 off of the shaft 52b. If pipette tip 41 has not been fully pushed off shaft distal end portion 54 by the force of eject spring 76, the user can further depress button 106 so as to cause center post 118 of the button to engage proximal end portion 68a of rod 68 and thus manually move the rod further downwardly from its position in FIG. 5 or FIG. 6 until collar 77 engages housing lower flange 73. (overforce mechanism)

In another embodiment, compressible spring means or spring 151 is carried within housing 127 for storing energy to facilitate removal of pipette tip 41 from pipette 126. Eject spring 151 has a first or upper end portion 151a disposed against button 137 and a second or lower end portion 151b disposed against ejector rod 133 and may have a spring constant ranging from about 0.15 to 20 lbs/in and preferably ranging from 0.6 to 3 lbs/in. A flange member or flange 152 is included within ejector assembly 131 and means is provided for securing the flange 152 integral with the ejector 132. More specifically, the flange 152 is formed integral with rod 133 and extends radially outwardly from one side of rod 133 in a direction perpendicular to the longitudinal axis of the rod. A second flange member or upper flange 153 is included within ejector

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assembly 131 and extends radially outwardly from one side of the cylindrical button 137 in a direction perpendicular to the longitudinal axis of the button. Spring upper end portion 151a is seated within an annular recess provided in the underside of upper flange 153 and spring lower end portion 151b is seated within a similar annular recess provided on the top surface of rod flange 152.

Button 137 and, more specifically, upper flange 153 thereof are included within the means of pipette 126 for compressing spring 151 so as to store energy in the spring. As shown in FIGS. 8 and 10, depression of button 137 by the user causes the eject spring 151 to compress. Pipette 126 further includes locking means carried by housing 127 for retaining eject spring 151 in its compressed position. Such locking means includes a spring biased pin member of pin 156 carried by ejector rod 133 (see FIGS. 8 and 9). The rod 133 is provided with a radially extending bore 157 for slidably receiving pin 156, which is retained in the bore 157 by any suitable means such as a sleeve 158 that is press fit into the outer cylindrical surface of rod 133. Pin 156 is formed with a flange that engages the sleeve 158 to limit the outward movement of the pin 156 from the rod 133. A helical spring 159 is disposed within bore 157 and engages the rear of pin 156 for urging the pin radially outwardly from the rod. Housing 127 is provided with a recess 166 formed in part by a shelf 167 for receiving the leading end of pin 156. Engagement of the forward end of pin 156 with shelf 167 serves to restrict downward movement of rod 133 within housing 127 and thereby longitudinally lock the rod 133 within housing handle 127a.

In operation and use, pipette tip 41 is mounted onto distal end portion 54 of pipette 126 same manner as discussed above. The force for mounting tip 41 to pipette 126, however, is less than the mounting force required in pipette 51 because eject spring 151 is not compressed in this mounting step of pipette 126. Extension 134 of the ejector 132 is sized so that extension collar 134b is spaced above the proximal end 41a of the pipette tip when the tip is press fit or otherwise suitably secured to the pipette. This separation or acceleration gap between pipette tip 41 and extension collar 134b may range from about 0.1 to 0.5 inch and is preferably approximately 0.3 inch. During mounting of pipette tip 41 to pipette 126, ejector 132 is locked in its uppermost position by means of locking pin 156.

The acceleration of ejector 132 across the separation gap between extension collar 134b and pipette proximal end 41a develops a momentum in the ejector 132 which in turn creates a peak ejection force upon impact that, for a given spring constant, is greater than the ejection force created by a pipette, such as pipette 51, which does not utilize an acceleration or separation gap. Such acceleration and subsequent impact overcome the static retention force to commence removal of the tip 41 from pipette 126 and permit eject spring 151 to have a lower spring constant than the eject spring in a similar pipette which does not utilize such a separation gap. Pipette 126 permits peak forces on the user's thumb to be reduced by more than an order of magnitude. Such forces can be limited to only a pound or two even though a tip 41 may require up to 20 pounds of force to commence movement of the tip down the pipette shaft 52b.

Although the locking and release mechanism of Magussen, Jr. et al. is not referred to as a latching assembly, it is disclosed that the elements perform the same function and are equivalent for the brake has a element (first latching means) that contacts (or engages) with a second element (second latching means) to hold the spring in a compressed state. As disclosed, when it is desired to release the spring a button (third latching means) is actuated to perform the release of the spring hence the removal of the tip via the sleeve.

As to claims 12-13 and 18, operator perceptible feedback output can be interpreted as simply the noise or sound made when the locking mechanism is engaged.

Allowable Subject Matter

6. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach nor fairly suggest a device comprising a first latch portion that is a keyhole slot formed in said sleeve, wherein said second latch portion is a detent having a large portion which fits in an enlarged portion of said slot when said sleeve is in the retracted position and a small portion sized to fit in a narrow portion of said slot, said narrow portion being adjacent said detent except when the sleeve is in the retracted position, and wherein said third latch portion is a button

operable for moving said small portion of the detent into said narrow portion of said slot, whereby said sleeve becomes unlatched.

The prior art of record does not teach nor fairly suggest a device comprising a first latch portion that is a projection at a proximal end of said sleeve, said second latch portion is a mating lip on a latch plate biased to have the lip engage the projection when the sleeve is in its retracted position, and said third latch portion is a portion of said latch plate which is manually operable to move the plate against its bias to move said lip away from said projection, permitting said sleeve to return to its normal position.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cote et al., Rainin et al. (2003/0082078 and ,841), Homberg, and Tervamaki disclose pipettes with tip removal mechanisms.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is (703) 305-0399. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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July 8, 2003

A handwritten signature in black ink, appearing to read "Jan Ludlow", written in a cursive style.

JAN LUDLOW
PRIMARY EXAMINER